The Preservation of Cartilage and other Tissues in a Dried Condition. W. Patten.

The cartilaginous crania and other parts of the skeleton of the skate, when perfectly dehydrated, may be cleared in benzole, turpentine or chloroform, and impregnated with paraffine in the usual manner preparatory to sectioning. But if, instead of imbedding them in a block of paraffine, they are drained in the warm oven for a few minutes, or wiped off quickly with blotting paper and then allowed to cool, they harden very quickly, with little or no shrinkage, and show very clearly the important anatomical details.

Complete dehydration may require days and even weeks of immersion in strong alcohol, to which pieces of calcium oxide are added to absorb the water given off by the tissues. In very difficult cases prolonged heating or boiling in alcohol may be necessary.

If the dehydration is not complete the objects will shrink when placed in paraffine. But in some cases the shrinkage will not appear till three or four weeks after exposure to the air. Paraffine that has been used before and contains oil of cloves, etc., discolors the tissues. The same is true of turpentine. When one wishes to preserve the clear, white color of the tissues the best results are obtained by using perfectly clear alcohol, chloroform and pure paraffine. The method has not been thoroughly tested, but there seems to be no reason why we cannot prepare in this way the entire skeletons of animals, whether in whole or in part cartilaginous, and entire embryos or adult animals, when not too large.

In this way series of amphibian eggs were prepared, which when fastened to a card are very useful in the laboratory; also a series of sections about $\frac{3}{16}$ of an inch thick from a horseshoe crab eight inches long. The sections are cut before dehydration and impregnated with paraffine afterwards. When the paraffine collected in exposed cavities (blood sinuses, elementary cavities, etc.), and would not drain off readily, it was absorbed while hot by a bit of blotting paper.

If the object is too large to be imbedded safely it may be cut open or sliced down approximately to the desired plane before dehydration and then heated, as described above. The imbedded pieces may then be cut down to the requisite level in the microtome, and, if necessary, heated again to drain off the excess of paraffine. Excellent sagittal sections of the brains of fishes were obtained in this way, showing very clearly the ventricles and their connections. The same method might be easily applied to show the structure of sea anemones, earth worms, mammalian embryos, etc.

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(*To be concluded.*)

ZOOLOGICAL NOTES.

THE FLORIDA MONSTER.

I have just received some large masses of the carcass cast ashore in December and described by me as the body of an *Octopus* in the *American Journal of Science* and elsewhere. These masses of integument are 3 to 10 inches thick, very tough and elastic, and very hard to cut. They are composed mainly of tough cords and fibers of white elastic connective tissue, much interlaced. This structure resembles that of the blubber of some cetaceans. The creature could not have been an *Octopus*. It was probably related to the whales, but how such a huge bag-like structure could be attached to any known whale is a puzzle that I am unable to solve at present.

The supposition that it was the body of an *Octopus* was partly based upon its bag-like form and partly upon the statements made to me that stumps of large arms were attached to it at first. This last statement was certainly untrue. A. E. Verrill.

February 23, 1897.